Volume 214 May 1990

CONTENTS

Laboratory experiments on the cloud-top entrainment instability. SHEN-QYANG S. SHY and ROBERT E. BREIDENTHAL *page* 1

On the instability of hypersonic flow past a wedge. STEPHEN COWLEY and PHILIP HALL 17

Parametrically excited standing edge waves. JOHN MILES 43

Wave reflection from a gently sloping beach. JOHN MILES 59

Theoretical model of discrete tone generation by impinging jets. CHRISTOPHER K. W. TAM and K. K. AHUJA 67

Higher-order boundary-layer solution for unsteady motion of a circular cylinder. SOONIL NAM 89

Formation of longitudinal vortices in the sublayer due to boundary-layer turbulence. Y. AIHARA 111

Free–forced interactions in developing meanders and suppression of free bars. M. TUBINO and G. SEMINARA 131

An analysis of the initial-value wavemaker problem. S. W. JOO, W. W. SCHULTZ and A. F. MESSITER 161

A stability analysis for interfacial waves using a Zakharov equation. A. DIXON 185

Two-dimensional shear dispersion for skewed flows in narrow gaps between moving surfaces. RONALD SMITH 211

Non-uniqueness and bifurcation in annular and planar channel flows. M. S. BORGAS and T. J. PEDLEY 229

Lubricated pipelining. Part 3. Stability of core–annular flow in vertical pipes. KANGPING CHEN, RUNYUAN BAI and DANIEL D. JOSEPH 251

An explanation for the multivalued heat transport found experimentally for convection in a porous medium. C. R. B. LISTER 287

Evolution of weakly nonlinear short waves riding on long gravity waves. JUN ZHANG and W. K. MELVILLE 321

An analytical study of transport, mixing and chaos in an unsteady vortical flow. V. ROM-KEDAR, A. LEONARD and S. WIGGINS 347

An analytic model of sound production by raindrops. MICHAEL S. LONGUET-HIGGINS 395

Vortex dynamics in a plane, moderate-Reynolds-number shear layer. E. PANIDES and R. CHEVRAY 411

On oscillatory flow over topography in a rotating fluid. J. E. Hart 437

Unsteady expansion of an ideal gas into a vacuum. D. M. Moody 455

Study on the flow structure around a flat plate in a stagnation flow field. Yong Kweon Suh and Ching Shi Liu 469

On nonlinear wave envelopes of permanent form near a caustic. T. R. Akylas and T.-J. Kung 489

Viscous sintering: the surface-tension-driven flow of a liquid form under the influence of curvature gradients at its surface. H. K. Kuiken 503

Chaotic advection of irrotational flows and of waves in fluids. S. M. Cox, P. G. Drazin, Susan C. Ryrie and K. Slater 517

Relative dispersion in two-dimensional turbulence. A. Babiano, C. Basdevant, P. Le Roy and R. Sadourny 535

Three-dimensional numerical simulation of buoyancy-driven convection in vertical cylinders heated from below. G. Neumann 559

Nonlinear dynamics of vertical vorticity in low-Prandtl-number thermal convection. Josep M. Massaguer, Isabel Mercader and Marta Net 579

The effect of weak gravitational force on Brownian coagulation of small particles. Y. G. Wang and C. S. Wen 599

The inviscid axisymmetric stability of the supersonic flow along a circular cylinder. Peter W. Duck 611

Brownian motion far from equilibrium: a hypersonic approach. P. Riesco-Chueca and J. Fernández De La Mora 639

Index to Volume 214 664